

## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.





United States  
Department of  
Agriculture

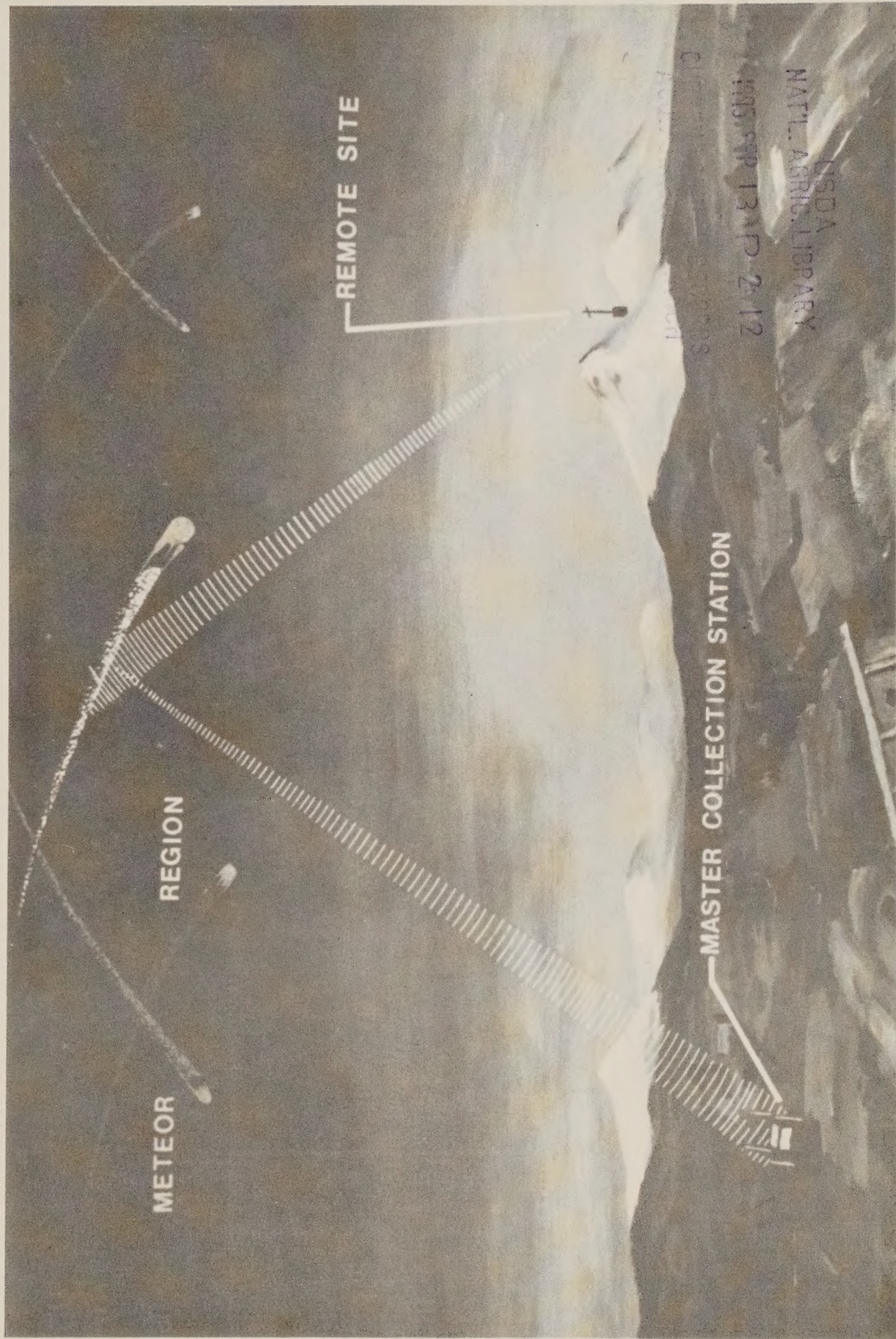


Natural  
Resources  
Conservation  
Service

# Washington Annual Data Summary Water Year 1994

262625  
W2W37

SS



USDA  
NATL. AGRIC. LIBRARY

1993 SEP 13 AM 2:12

CLINTON COUNTY, NEW YORK





## An Annual Summary

## Foreword

This report summarizes the snow water equivalent and precipitation data collected during this water year. This information was utilized in preparing the Natural Resources Conservation Service Water Supply Outlook Reports, January 1st through June 1st.

These data were obtained using a combination of manual and automated measurement methods and are presented as a historical summary.

## For More Information

Copies of this Annual Data Summary and monthly Water Supply Outlook Reports may be obtained from the states listed below. Historical snow survey data may be obtained at those same offices. Computer access to water supply information may be gained through the Centralized Forecast System (CFS) at Portland, Oregon. For more information contact the state offices listed below.

STATE	ADDRESS
Alaska	949 E. 36th Avenue, Suite 400, Anchorage, AK 99508-4362
Arizona	3003 North Central Avenue, Suite 800, Phoenix, AZ 85012-2945
California	2121-C 2nd Street, Suite 102, Davis, CA 95616-5475
Colorado	655 Parfet Street, Room E200C, Lakewood, CO 80215-5517
Idaho	3244 Elder Street, Room 124, Boise, ID 83705-4711
Montana	Federal Building, Room 443, 10 E. Babcock, Bozeman, MT 59715
Nevada	5301 Longley Lane, Building F, Suite 201, Reno, NV 89511
New Mexico	6200 Jefferson NE, Albuquerque, NM 87109-3734
Oregon	101 SW Main Street, Suite 1300, Portland, OR 97204-3221
Utah	245 North Jimmy Doolittle Road, Salt Lake City, UT 84116
Washington	Rock Pointe Tower II, Suite 450, W. 316 Boone Ave., Spokane, WA 99201-2348
Wyoming	Federal Building, 100 East "B" Street, Casper, WY 82601

## Other Sources

Annual and historical information is prepared by other agencies including: NOAA - State Climatological Annual Summaries, N.C.D.C., Asheville, NC 28801; California - Snow Survey Branch, California Department of Water Resources, P.O. Box 942836, Sacramento, CA 94236-0001; British Columbia - The Ministry of Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia, V8V 1X5; Yukon Territory - Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory, Y1A 3V1; Alberta Environment Technical Services Division, 9820 106th St., Edmonton, Alberta, T5K 2J6.

The United States Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, sex, religion, age, disability, political beliefs and marital or familial status. (Not all prohibited basis apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact the USDA Office of Communications at (202) 720-5881 (voice) or (202) 720-7808 (TDD).

To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C., 20250, or call (202) 720-7327 (voice) or (202) 720-1127 (TDD). USDA is an equal employment opportunity employer.



# Washington Cooperative Snow Survey Data of

Federal - State - Private  
Cooperative Snow Surveys

## Issued by

Paul W. Johnson  
Chief  
Soil Conservation Service  
Washington, D.C.

## Released by

Lynn A. Brown  
State Conservationist  
Soil Conservation Service  
Spokane, Washington

## Prepared by

Scott H. Pattee  
Acting Water Supply Specialist  
Soil Conservation Service  
Rock Pointe Tower II, Suite 450  
W. 316 Boone Avenue  
Spokane, WA 99201-2348

# Table of Contents

	Page
INTRODUCTION .....	1
DATA - Water Year 1994	
SNOTEL SWE .....	2
Snow Course .....	5
Monthly Precipitation .....	9
AVERAGES - 30-YEAR PERIOD 1961 - 1990	
SNOTEL SWE .....	11
Snow Course .....	14
Monthly Precipitation .....	17
GLOSSARY .....	19
COOPERATING AGENCIES AND ORGANIZATIONS .....	21
DATA SITE MAP .....	Inside Back Cover



## Natural Resources Conservation Service Data Collection Network

# Introduction

The Natural Resources Conservation Service (NRCS) has operated the Federal-State-Private Cooperative Snow Survey Program in the western United States since 1935. Utilizing a network of automated SNOTEL (SNOWpack TELEmetry) data collection sites, manual snow courses and storage precipitation gauges, NRCS collects, analyzes, and manages snowpack and climatic data in support of water supply forecasting and other resource management activities.

Initially, over 2000 snow courses were established to collect information on mountain snowpack which provides over 75 percent of the West's water supply. The current network consists of approximately 800 active snow courses. Since the late 1970's, over 570 SNOTEL sites have been installed to enhance the network—in many cases replacing existing snow courses. These remote stations not only provide more timely information, they also offer the opportunity to collect additional data needed for management of our natural resources.

## SNOTEL Sites

A standard SNOTEL site consists of a snow pillow, a storage-type precipitation gauge, air temperature sensor, and a small shelter for housing the electronics. Additional parameters such as soil moisture, soil temperature, wind, humidity, and solar radiation are monitored at certain stations for specific applications. SNOTEL sites report on a daily or more frequent basis. The following is an explanation of the standard parameters measured at all SNOTEL sites.

**Snow Water Equivalent (SWE):** A snow pillow measures the snow water equivalent of the overlying snowpack. Snow pillows are "envelopes" of stainless steel or synthetic rubber (hypalon) containing an antifreeze solution. SWE is calculated by measuring the pressure exerted on these pillows by the weight of the snow. Hypalon snow pillows range in size from 6, 8, 10, or 12 feet in diameter with the larger pillows used in heavier snow accumulation zones. Stainless steel pillows are 4 feet x 5 feet and usually configured in groups of two, three, or four depending on snow depth.

**Precipitation:** The standard SNOTEL precipitation gauge is designed to store the expected annual precipitation at a specific site. The liquid equivalent (in inches) of rainfall, snow, sleet, or hail is measured by the gauge. The gauge is 12 inches in diameter with an alter shield at the orifice to reduce wind effect on precipitation catch. The height of SNOTEL precipitation gauges is designed to be at least three feet above the maximum expected depth of the snowpack, resulting in total gauge heights of 8, 12, 16, 20, 24, 28, and 32 feet.

**Temperature:** Daily maximum, minimum, and average ambient air temperatures are collected at each site with a self-aspirating shielded temperature sensor.

## Snow Courses

Snow courses are permanently marked locations where snow depth and SWE are measured. Most snow courses consist of five to ten sample points. Individual measurements are averaged to derive one value of snow depth and SWE for each snow course. Typically, snow courses are measured near the first of the month from January to June, with mid-month measurements conducted at some locations.

## Manual Precipitation Gauges

Manually measured precipitation gauges have a 6-, 8-, or 10-inch orifice. Most gauges have an alter shield to diminish the wind effect on precipitation catch. The gauges are measured near the end of the month to determine an approximate monthly precipitation total.



# SNOTEL SWE's - WY 1994 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	DATE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	SNOWPACK			MELTOUT DATE
															START DATE	MAX SWE	MAX DATE	
BLEWETT PASS	4270	1st 15th	.0 .0	.0 .0	1.8 4.9	6.3 7.9	8.3 9.4	13.2 12.8	12.8 10.7	3 .0	.0 .0	.0 .0	.0 .0	.0 .0	11/16	13.7	3/27	5/2
BUMPING RIDGE	4600	1st 15th	.0 .0	.0 .0	2.7 7.6	8.6 11.5	10.8 14.2	20.3 20.3	23.5 23.9	16.6 7.2	.0 .0	.0 .0	.0 .0	.0 .0	11/15	24.4	4/9	5/26
BUNCHGRASS MDW	5000	1st 15th	.0 .0	.2 .7	3.5 9.6	11.1 15.8	16.3 17.4	21.3 21.8	24.3 27.1	17.9 7.9	.0 .0	.0 .0	.0 .0	.0 .0	10/28	27.2	4/14	5/26
CORRAL PASS	6000	1st 15th	.0 .0	.0 .1	2.6 7.0	7.6 12.3	12.9 14.1	21.9 22.8	26.6 27.8	24.7 18.2	12.5 4.5	.0 .0	.0 .0	.0 .0	11/13	27.8	4/16	6/21
COUGAR MOUNTAIN	3200	1st 15th	.0 .0	.0 .0	3.3 4.6	3.5 3.5	2.7 4.5	10.2 7.7	8.8 9.0	.0 .0	.0 .0	.0 .0	.0 .0	.0 .0	11/16	11.8	3/25	4/25
FISH LAKE	3371	1st 15th	.0 .0	.0 .1	5.2 11.8	13.4 18.5	18.9 22.5	29.7 28.2	28.8 26.1	14.1 1.3	.0 .0	.0 .0	.0 .0	.0 .0	11/14	30.7	3/26	5/20
GREEN LAKE	6000	1st 15th	.1 .2	.0 .0	1.8 6.7	7.6 10.2	10.2 11.7	16.9 16.8	18.3 18.8	14.4 3.5	.0 .0	.0 .0	.0 .0	.0 .0	11/24	18.8	4/16	5/24
GROUSE CAMP	5380	1st 15th	.0 .0	.1 .0	1.2 6.8	7.8 10.0	10.4 11.4	16.1 16.1	15.5 14.1	3.3 .0	.0 .0	.0 .0	.0 .0	.0 .0	11/21	17.2	3/22	5/5
HARTS PASS	6500	1st 15th	.0 .0	.0 .4	3.3 11.0	11.7 15.4	16.8 19.8	26.4 28.1	30.6 31.3	26.7 16.5	6.0 .0	.0 .0	.0 .0	.0 .0	11/14	31.3	4/18	6/9
JUNE LAKE	3340	1st 15th	.0 .0	.0 .0	5.1 11.9	13.9 13.4	12.4 14.4	26.0 22.7	28.7 31.8	19.1 .0	.0 .0	.0 .0	.0 .0	.0 .0	11/15	33.5	4/11	5/13
LONE PINE	3800	1st 15th	.0 .0	.0 .0	3.1 10.0	11.4 15.2	14.1 17.5	27.8 25.3	28.0 30.7	24.2 15.6	5.1 .0	.0 .0	.0 .0	.0 .0	11/15	30.7	4/16	6/9
LOST HORSE	5000	1st 15th	.0 .0	.0 .0	1.4 6.1	5.8 8.3	8.3 8.8	14.7 15.5	15.9 13.6	.7 .0	.0 .0	.0 .0	.0 .0	.0 .0	11/18	16.7	3/29	5/3
LYMAN LAKE	5900	1st 15th	.0 .0	.8 2.1	6.7 17.0	18.0 23.6	27.1 30.3	39.9 43.8	45.8 47.7	42.2 29.6	17.5 3.0	.0 .0	.0 .0	.0 .0	10/28	47.7	4/19	6/24
MEADOWS PASS	3240	1st 15th	.0 .0	.0 .0	3.0 5.5	6.2 7.7	5.5 7.6	11.3 11.8	11.0 9.8	1.5 .0	.0 .0	.0 .0	.0 .0	.0 .0	11/21	12.0	3/29	5/3

\* - Permanent snowpack commenced in prior Water Year.



# SNOTEL SWE's - WY 1994 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	DATE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	SNOWPACK			MELTOUT DATE
															START DATE	MAX SWE	MAX DATE	
MINERS RIDGE	6200	1st	.0	.7	6.6	16.4	24.7	35.4	40.7	35.9	17.0	.0	.0	.0				
		15th	.0	2.3	15.2	22.1	28.0	38.7	43.3	25.4	8.2	.0	.0	.0	10/29	43.3	4/15	6/24
MORSE LAKE	5400	1st	.0	.0	4.7	18.3	24.8	36.4	39.9	30.8	8.7	.0	.0	.0				
		15th	.0	1.1	16.4	24.7	27.7	37.7	44.1	20.7	.0	.0	.0	.0	11/12	44.1	4/15	6/10
MOSES MTN	5300	1st	.0	.0	.2	4.1	5.0	9.0	7.9	.0	.0	.0	.0	.0				
		15th	.0	.0	3.3	5.0	5.0	8.7	8.3	.0	.0	.0	.0	.0	11/24	9.4	3/27	4/30
MOUNT CRAG	4050	1st	.0	.0	.7	11.5	11.7	24.9	27.0	20.5	.0	.0	.0	.0				
		15th	.0	.1	10.5	12.0	15.6	25.4	27.6	10.9	.0	.0	.0	.0	11/12	28.4	3/25	5/28
MOUNT GARDNER	2860	1st	.0	.0	2.5	4.3	3.2	12.9	9.1	.0	.0	.0	.0	.0				
		15th	.0	.0	3.0	4.8	5.9	10.1	5.4	.0	.0	.0	.0	.0	11/16	13.4	2/28	4/19
OLALLIE MEADOWS	3700	1st	.0	.0	6.0	15.9	20.7	35.2	39.6	35.0	6.0	.0	.0	.0				
		15th	.0	.6	12.8	20.4	25.6	34.8	42.5	21.6	.0	.0	.0	.0	11/2	43.1	4/12	6/9
PARADISE	5120	1st	.0	.0	8.9	17.3	29.1	47.4	57.7	61.3	43.6	15.3	.0	.0				
		15th	.0	1.2	17.3	26.8	32.1	48.7	63.6	51.9	35.3	.0	.0	.0	11/1	63.6	4/18	7/13
PARK CREEK RIDGE	4600	1st	.0	.0	2.4	10.7	15.8	23.2	24.1	13.7	.0	.0	.0	.0				
		15th	.0	.0	9.5	15.1	17.3	24.4	22.0	.0	.0	.0	.0	.0	11/15	26.0	3/29	5/14
PIGTAIL PEAK	5900	1st	.0	.0	4.5	12.9	20.8	31.9	37.6	36.0	19.2	.0	.0	.0				
		15th	.0	.0	11.5	20.8	22.7	32.9	40.8	27.7	9.8	.0	.0	.0	11/16	40.8	4/15	6/24
POPE RIDGE	3540	1st	.0	.0	1.3	7.1	9.8	14.9	12.2	.0	.0	.0	.0	.0				
		15th	.0	.0	6.1	9.3	11.1	14.0	8.2	.0	.0	.0	.0	.0	11/15	14.9	3/3	4/28
POTATO HILL	4500	1st	.0	.0	2.3	7.5	10.6	20.5	22.1	13.3	.0	.0	.0	.0				
		15th	.0	.2	6.8	9.7	12.8	19.7	22.1	.0	.0	.0	.0	.0	11/10	23.3	3/29	5/15
QUARTZ PEAK	4700	1st	.0	.0	2.9	9.3	13.5	17.2	16.2	4.8	.0	.0	.0	.0				
		15th	.0	.0	8.2	13.2	13.9	16.7	16.1	.0	.0	.0	.0	.0	11/17	18.0	3/25	5/8
RAINY PASS	4780	1st	.0	.1	4.1	12.7	19.8	29.0	33.0	25.2	.0	.0	.0	.0				
		15th	.0	.9	11.3	17.7	22.2	30.2	33.9	12.6	.0	.0	.0	.0	10/31	33.9	4/17	5/30
SALMON MEADOWS	4500	1st	.0	.0	.6	4.2	5.4	9.6	7.5	.0	.0	.0	.0	.0				
		15th	.0	.0	3.8	5.1	5.9	9.4	5.7	.0	.0	.0	.0	.0	11/24	10.3	3/24	4/21

\* - Permanent snowpack commenced in prior Water Year.



# SNOTEL SWE's - WY 1994 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	DATE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	SNOWPACK			MELTOUT DATE
															START DATE	MAX SWE	MAX DATE	
SASSE RIDGE	4200	1st 15th	.0 .0	.0 .0	3.1 8.8	9.9 14.5	15.4 18.7	26.6 26.7	30.2 30.6	18.5 2.2	.0 .0	.0 .0	.9 .0	.0	11/15	31.2	4/10	5/18
SHEEP CANYON	4030	1st 15th	.0 .0	.0 .0	4.1 7.2	8.2 12.9	11.0 13.1	25.8 21.2	30.1 34.1	24.7 9.6	.0 .0	.0 .0	.0 .0	.0	11/15	34.6	4/13	5/26
SPENCER MEADOW	3400	1st 15th	.0 .0	.0 .4	4.3 9.7	10.3 13.5	13.0 16.6	28.8 25.9	29.5 30.9	18.4 .0	.0 .0	.0 .0	.0 .0	.0	11/4	32.2	4/10	5/14
SPIRIT LAKE	3120	1st 15th	.0 .0	.0 .2	.0 2.3	2.4 1.3	.0 1.4	7.8 .0	.9 .8	.0 .0	.0 .0	.0 .0	.0 .0	.0	12/3	9.1	2/28	1/31
STAMPEDE PASS	3860	1st 15th	.0 .0	.0 1.1	4.9 8.8	10.5 17.3	18.6 21.1	34.4 32.7	36.5 37.4	27.3 12.2	.0 .0	.0 .0	.0 .0	.0	11/3	37.9	4/17	5/27
STEVENS PASS	4070	1st 15th	.0 .0	.0 .1	4.8 11.8	13.1 18.6	20.2 24.0	32.0 35.4	39.6 40.0	31.8 15.7	.0 .0	.0 .0	.0 .0	.0	11/2	40.6	4/18	5/31
SURPRISE LAKES	4250	1st 15th	.0 .0	.0 .6	4.1 12.3	14.1 21.8	22.6 24.0	36.7 37.3	41.5 44.5	35.1 20.6	4.0 .0	.0 .0	.0 .0	.0	11/2	44.5	4/15	6/5
THUNDER BASIN	4200	1st 15th	.0 .0	.0 .6	3.7 11.0	11.9 16.0	17.1 20.1	25.8 24.9	27.0 26.0	17.4 7.5	.0 .0	.0 .0	.0 .0	.0	11/8	28.2	3/25	5/26
TINKHAM CREEK	3000	1st 15th	.0 .0	.0 .0	3.7 6.7	7.6 10.9	10.6 14.6	23.1 20.6	22.6 20.1	7.4 .0	.0 .0	.0 .0	.0 .0	.0	*	24.5	2/28	5/9
TOUCHET #2	5530	1st 15th	.0 .0	.0 .3	3.2 7.4	8.5 14.8	14.9 16.2	23.8 23.4	25.9 28.3	18.8 .0	.0 .0	.0 .0	.0 .0	.0	11/13	28.3	4/15	5/14
TROUGH	5300	1st 15th	.0 .0	.0 .0	.7 5.2	6.1 7.3	7.4 7.7	8.7 8.0	7.1 5.5	.0 .0	.0 .0	.0 .0	.0 .0	.0	11/29	9.1	2/28	4/20
UPPER WHEELER	4400	1st 15th	.0 .0	.0 .0	1.2 3.7	5.0 5.5	6.2 7.1	10.1 9.8	9.9 9.0	2.0 .0	.0 .0	.0 .0	.0 .0	.0	11/21	10.1	3/3	5/4
WHITE PASS E.S.	4500	1st 15th	.0 .0	.0 .5	2.6 6.7	7.5 11.2	11.4 12.4	18.5 18.3	20.7 20.6	14.0 7.1	.0 .0	.0 .0	.0 .0	.0	11/10	21.3	3/28	5/23

\* - Permanent snowpack commenced in prior Water Year.

# Snow Course Data - WY 1994 (Depth & SWE in inches)

SNOW COURSE NAME	ELEV. (ft.)	JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE		
		DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE
AHTANUM R.S.	3100	1/13	10	3.0	2/1	10	4.0	3/1	18	4.8	4/1	3	1.8						
ALPINE MEADOWS	3500							Est	-	27.3	Est	69	31.0						
BAIRD #2	3220				1/27	22	6.2	2/22	28	7.6	3/28	19	6.9						
BEAVER CREEK TRAIL	2200				1/28	5	1.4	3/3	23	8.4	3/26	19	6.8	4/28	0	.0	5/27	0	.0
BEAVER PASS	3680				1/28	29	9.6	3/3	56	20.6	3/28	60	23.4	4/28	37	17.0	5/27	0	.0
BERNE-MILL CREEK (d)	3170	12/28	31	9.3	1/28	38	12.7	2/28	75	22.7	3/30	68	27.5						
BIG BOULDER CREEK	3200										Est	-	16.6	Est	-	5.3			
BLEWETT PASS #2	4270				1/27	28	8.7				3/29	30	10.3						
BOYER MOUNTAIN	5250							2/23	53	16.4	3/28	49	18.6	4/26	30	12.8			
BRIEF	1600				1/25	20	5.6	2/24	26	8.0	3/30	0	.0						
BROWN TOP AM	6000				1/26	76	25.4	3/1	123	41.8	3/26	126	50.4	4/28	90	44.4	5/27	43	21.6
BUMPING LAKE	3450	12/29	16	3.4	1/28	24	8.2	2/28	49	13.1	3/30	29	11.2						
BUMPING LAKE (NEW)	3400	12/29	19	5.2	1/28	24	8.2	Est	-	15.3	3/30	38	15.1	Est	-	7.6			
BUNCHGRASS MEADOWS	5000							2/22	70	21.5	3/28	64	25.2	4/28	40	18.9			
BUTTE CREEK	4070							Est	-	15.3	3/29	19	5.7						
CAYUSE PASS	5300				Est	-	41.8	Est	-	53.5	Est	-	75.8	Est	-	68.7			
CHEWALAH	4930							2/24	47	13.5	3/29	41	14.4						
CHEWALAH #2	4930										3/29	41	14.4						
CHIWAUKUM G.S.	2500	12/28	22	4.2	1/28	24	7.3	2/28	37	9.6	3/30	27	11.2						
CITY CABIN	2390							3/2	18	6.4	Est	0	.0						
CLOUDY PASS AM	6500				1/27	44	15.8				3/28	72	30.2						
COLOCKUM PASS	5370				1/26	29	8.4				3/29	35	12.6						



# Snow Course Data - WY 1994 (Depth & SWE in inches)

SNOW COURSE NAME	ELEV. (ft.)	JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE		
		DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE
CORRAL PASS	6000				1/29	46	15.5	Est	-	27.1	4/4	74	29.2						
COUGAR MOUNTAIN(d)	3200				Est	-	2.7				4/4	28	9.6	Est		.0			
COX VALLEY	4500				1/31	34	11.4	2/28	80	25.9	3/28	83	32.0	4/30	51	23.8			
DEER PARK	5200				1/27	16	4.2	2/24	44	11.7	3/30	33	13.0	4/28	7	3.0			
DEVILS PARK	5900				1/27	56	17.6	3/1	85	27.6	3/26	85	5.7	4/27	66	29.6	5/26	26	13.6
DOCK BUTTE AM	3800	12/27	46	21.6	2/1	58	26.1	3/17	96	45.1	3/30	100	41.0				Est	-	24.4
EASY PASS AM	5200	12/27	50	22.0	Est	96	30.0	3/7	144	66.2	3/30	162	68.0				Est	-	36.6
FISH LAKE	3370	12/28	39	12.1	1/26	52	19.1	2/24	95	27.2	Est	-	28.3	Est		12.1			
FREEZEOUT CK. TRAIL	3500				1/26	9	2.8	3/2	21	6.6	3/27	21	6.8	4/27	0	.0	5/27	0	.0
GOAT CREEK	3600				1/31	16	4.6	2/24	26	5.9	3/29	3	.9						
GRANITE CREEK	3500				1/27	25	7.8	3/2	38	13.2	3/27	36	12.6	4/29	4	1.4	5/26	0	.0
GRASS MOUNTAIN #2	2900	1/3	0	.0	1/29	0	.0	3/7	0	.0	Est	0	.0			5/31	0	.0	
GREEN LAKE	6000				2/1	45	16.8	Est	-	28.4	Est	-	30.0						
GROUSE CAMP	5380				1/27	30	10.4	Est	-	14.6	3/31	32	13.8						
HARTS PASS	6500				1/27	55	16.9	3/1	85	26.3	3/26	83	30.7	4/27	67	31.1	5/26	32	16.0
HURRICANE	4500				1/28	7	1.9	2/27	43	11.0	3/29	42	14.8	4/26	17	7.0			
JASPER PASS AM	5400	12/27	70	30.1	2/1	100	41.0	3/7	148	68.1	3/30	154	61.6						
KELLER RIDGE	3700				Est	20	7.6	2/23	20	5.6	3/31	0	.0						
KROMONA MINE	2400				1/31	4	1.6	3/2	29	13.4	3/25	37	14.6						
DOMMERIE FLATS	2200	12/28	8	2.6	2/1	0	.0	2/23	18	4.1									
LESTER CREEK	3100	1/3	23	6.6	1/29	26	7.6	3/7	48	16.0	Est	50	18.2				5/31	0	.0
LITTLE MDWS AM	5280				1/27	68	24.0				3/28	88	38.7						

# Snow Course Data - WY 1994 (Depth & SWE in inches)

SNOW COURSE NAME	ELEV. (ft.)	JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE		
		DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE
LYMAN LAKE	5900	Est	-	16.7	1/27	80	29.0				3/28	107	45.9						
LYNN LAKE	4000	1/3	0	.0	1/29	11	3.5	3/7	24	9.2	Est	31	11.2				5/31	0	.0
MARTEN LAKE AM	3600	12/27	48	22.6	2/1	76	31.5	3/7	120	55.2	3/30	135	54.0						
MEADOWS CABIN	1900				1/27	0	.0	3/1	10	2.3	3/28	2	.8	4/28	0	.0	5/26	0	.0
MERRITT	2140	12/28	16	4.1	1/28	14	4.3	2/28	37	9.9	3/30	21	7.0						
MIDDLE SULTAN	3010				1/31	0	.0	3/2	18	8.5	3/25	26	9.6						
MISSION RIDGE	5000				1/26	32	10.1	2/25	53	13.8	3/31	39	13.9						
MOUNT TOLMAN	2000				Est	11	6.3	2/22	7	2.6	3/31	0	.0						
MOSES MEADOWS (3)	3800				Est	11	2.6	2/24	12	2.8	3/31	0	.0						
MOSES MOUNTAIN (1)	4800				1/20	26	8.1	2/24	55	14.1	3/31	48	12.0						
MOSES PEAK (2)	6650				1/20	30	7.1	2/24	44	10.7	3/31	33	12.0						
MT. BLUM AM	5800	12/27	36	14.4	2/1	64	25.6	3/7	124	57.0	3/30	126	50.4				Est	-	34.0
MT. GARDNER	3300				1/28	4	1.6	Est	-	12.9	Est	16	7.0						
MUTTON CREEK #1	5700				2/1	24	7.1	2/28	47	12.8	3/30	29	11.2						
NEW HOZOMEEN LAKE	2800				1/26	5	1.5	3/2	16	4.3	3/27	16	20.0	4/27	0	.0	5/27	0	.0
OLALLIE MEADOWS	3630				1/30	34	13.3	3/2	65	25.0	4/3	61	28.7						
OLNEY PASS	3250				1/31	0	.0	3/2	21	9.7	3/25	30	11.0						
PARK CREEK RIDGE	4600										3/28	80	34.9						
RAGGED RIDGE	3330	12/29	15	3.6				2/23	25	7.2	Est	-	.0						
RAINY PASS	4780				1/27	56	17.4	3/1	75	24.6	3/27	80	31.0	4/29	56	26.6	5/26	6	3.0
ROCKY CREEK AM	2100	12/27	15	6.3	2/1	6	2.4	3/7	40	16.4	3/30	36	14.4						
RUSTY CREEK	4000				2/1	12	3.7	2/28	23	5.8	3/30	7	2.4						



# Snow Course Data - WY 1994 (Depth & SWE in inches)

SNOW COURSE NAME	ELEV. (ft.)	JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE		
		DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE	DATE	DEPTH	SWE
SF THUNDER CK AM	2200	12/27	0	.0	2/1	0	.0	3/7	6	2.2	3/30	0	.0						
SALMON MEADOWS	4500										3/30	21	6.5						
SATUS PASS	4030				2/7	17	5.3	2/23	18	5.7	3/30	2	.9						
SAWMILL RIDGE	4700	1/3	34	8.7	1/29	33	12.3	3/7	60	18.5	Est	55	21.5						
SCHREIBERS MDW AM	3400	12/27	36	16.9	2/1	36	15.1	3/7	72	33.1	3/30	96	39.4	Est	-	42.2	Est	-	18.6
STEMILT SLIDE	5000				1/26	27	7.7	2/24	44	11.0	3/29	24	9.0						
STEVENS PASS SAND SD	3700	12/28	34	10.4	1/28	42	15.4	2/28	82	24.8	3/30	62	25.6						
STICKNEY RIDGE	3640				1/31	37	16.0	3/1	82	31.8	3/25	95	38.7						
STRANGER MOUNTAIN	4230										3/29	30	9.9						
SUMMIT G.S.	4600				1/31	20	4.9	2/24	31	6.8	3/29	17	4.9						
SUMMIT G.S. #2	4600				1/31	21	4.9	2/24	32	6.9	3/29	21	6.1						
SUMMIT TRAIL(d)	3840				1/31	20	4.9	2/22	19	5.4	3/31	0	.0						
THUNDER BASIN	4200				1/27	35	11.6	3/1	56	16.8	3/28	56	20.0	4/28	39	15.6	5/26	3	.8
TOGO	3370				1/28	24	7.4	2/28	33	9.4	Est	-	7.5						
TUNNEL AVENUE	2450	12/27	16	6.1	1/27	21	8.2	2/25	53	13.8	3/28	40	16.4	Est	-	8.3			
TWIN CAMP	4100	1/3	34	7.8	1/29	37	12.7	3/7	65	21.7	4/4	62	24.0				5/31	0	.0
TWIN LAKES	2700				Est	26	6.3	2/23	19	7.2	3/31	0	.0						
UPPER WHEELER	4400				1/26	17	5.3	2/24	24	7.1	3/29	2	.9						
WATSON LAKES AM	4500	12/27	46	18.4	2/1	55	22.0	3/7	80	35.2	3/30	120	48.0	Est	-	47.0	Est	-	25.8
WHITE PASS E.S.	4500	Est	-	6.7	Est	-	11.8	Est	-	18.5	Est	-	21.2						
AIRSTRIIP (DISC)	1800										Est	-	.0						

# Monthly Precipitation - WY 1994 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
BLEWETT PASS	4270	.0	3.0	6.6	3.0	6.1	2.2	1.6	1.4	1.0	1.0	.5	.5	26.9
BUMPING RIDGE	4600	2.0	3.8	7.2	6.7	11.7	6.7	4.5	7.5	.9	1.4	.7	1.2	54.3
BUNCHGRASS MDW	5000	2.4	3.3	7.5	5.1	4.9	3.1	4.4	3.7	4.7	.7	.4	1.8	42.0
CORRAL PASS	6000	3.3	3.2	5.7	5.9	8.9	5.3	3.8	4.7	3.6	1.5	.1	1.6	47.6
COUGAR MOUNTAIN	3200	5.9	8.1	6.7	11.1	10.5	7.0	8.5	4.1	4.8	1.7	.7	5.3	74.4
FISH LAKE	3371	2.3	7.3	9.8	6.6	9.7	5.2	2.3	1.5	1.8	.5	.6	1.5	49.1
GREEN LAKE	6000	1.0	1.5	5.7	2.9	6.2	2.3	2.1	2.0	1.9	.4	.0	.7	26.7
GROUSE CAMP	5380	.1	1.4	5.6	2.6	4.5	1.7	3.1	1.3	1.3	1.5	.3	.9	24.3
HARTS PASS	6500	3.5	3.3	7.0	4.0	7.0	4.5	3.5	1.3	2.3	.6	.8	1.1	38.9
JUNE LAKE	3340	5.0	10.2	23.6	20.7	25.3	17.6	10.0	7.0	8.3	.8	.3	7.8	136.6
LONE PINE	3800	2.8	6.3	13.6	11.0	14.3	7.7	7.1	3.8	4.5	.6	.8	4.4	76.9
LOST HORSE	5000	.4	1.8	5.9	2.9	6.3	1.9	2.1	1.3	1.5	.3	.1	.7	25.2
LYMAN LAKE	5900	3.2	5.4	11.0	7.3	10.8	5.9	3.7	1.5	3.0	.6	.3	3.1	55.8
MEADOWS PASS	3240	.0	7.9	6.3	14.6	8.7	6.5	5.8	3.7	5.0	1.8	.5	2.3	63.1
MINERS RIDGE	6200	3.8	6.3	9.5	8.6	9.1	9.0	4.6	2.9	3.5	1.8	.3	4.0	63.4
MORSE LAKE	5400	2.6	4.2	13.6	8.3	12.8	7.1	4.3	3.3	2.4	1.6	.3	1.2	61.7
MOSES MTN	5300	.6	.4	2.4	2.0	4.7	1.8	3.2	1.6	1.2	.1	.0	.3	18.3
MOUNT CRAG	4050	2.9	3.0	16.2	7.7	13.1	5.0	3.8	3.0	1.8	.1	.5	1.3	58.4
MOUNT GARDNER	2860	.0	6.0	9.1	16.4	11.3	8.5	7.6	4.0	5.8	1.9	.4	3.8	74.8
OLLALLIE MEADOWS	3700	5.1	11.9	13.2	9.3	16.1	10.8	8.2	5.2	9.1	3.7	.2	5.0	97.8
PARADISE	5120	3.5	9.2	11.5	13.1	18.3	8.9	6.9	4.5	4.3	.9	.4	4.6	86.1
PARK CREEK RIDGE	4600	3.3	4.7	11.9	6.9	9.3	6.1	2.0	1.2	1.2	.6	.7	1.2	49.1
PIGTAIL PEAK	5900	1.0	3.1	8.7	9.0	11.3	7.9	4.8	2.9	3.7	2.3	.1	2.1	56.9
POPE RIDGE	3540	1.1	1.8	5.7	2.9	5.4	1.9	1.6	.6	1.3	.0	.5	.1	22.9
POTATO HILL	4500	1.3	3.1	7.5	6.3	7.8	5.1	2.9	3.5	2.7	.7	.0	2.9	43.8
QUARTZ PEAK	4700	2.0	2.9	6.6	4.8	3.4	2.2	3.5	2.4	3.0	.1	.1	1.5	32.5
RAINY PASS	4780	4.4	3.8	7.7	5.6	8.0	4.4	3.2	1.7	2.1	.9	.9	1.2	43.9
SALMON MEADOWS	4500	.6	.5	3.4	1.7	4.2	.4	2.1	2.3	2.7	.2	.8	.6	19.5
SASSE RIDGE	4200	1.1	4.6	7.9	5.7	8.9	4.4	2.9	1.5	1.7	.7	.2	.7	40.3
SHEEP CANYON	4030	3.8	5.2	15.1	13.9	14.8	13.4	9.2	5.4	6.2	1.0	.7	4.0	92.7
SPENCER MEADOW	3400	1.9	6.5	12.9	12.9	17.3	10.5	6.7	4.7	4.4	.5	.1	4.1	82.5
SPIRIT LAKE	3120	2.6	5.1	9.8	8.4	10.1	7.0	6.0	3.1	4.1	1.9	.2	3.1	61.4
STAMPEDE PASS	3860	3.4	8.1	8.8	10.1	11.9	6.0	3.3	1.5	3.0	1.7	.3	3.3	61.4
STEVENS PASS	4070	3.5	7.9	10.8	10.1	13.0	7.9	2.9	2.4	3.9	1.4	.8	2.9	67.5
SURPRISE LAKES	4250	1.6	6.0	12.5	12.2	14.0	8.2	6.0	3.6	5.5	.8	.1	3.7	74.2



# Monthly Precipitation - WY 1994 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
THUNDER BASIN	4200	4.1	6.4	8.9	5.6	8.7	6.6	3.5	3.4	2.7	1.0	.4	1.2	52.5
TINKHAM CREEK	3000	100.0	-92.7	16.2	11.6	12.5	7.8	7.5	4.2	5.3	2.1	.5	1.8	76.8
TOUCHET #2	5530	1.5	3.5	6.0	7.6	8.7	3.6	3.2	1.8	1.5	1.4	.0	1.0	39.8
TROUGH	5300	.4	1.2	4.4	1.6	3.2	1.2	2.4	1.2	1.0	.7	.1	.6	18.0
UPPER WHEELER	4400	.3	1.1	4.0	2.5	3.0	1.6	2.8	1.5	1.4	.9	.1	.5	19.7
WHITE PASS E.S.	4500	.6	3.1	5.3	4.8	6.2	3.7	1.3	1.5	1.4	1.2	.0	1.4	30.5

# SNOTEL SWE Averages: 1961 - 1990 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	DATE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
BLEWETT PASS	4270	1st 15th	.0 .0	.5 1.6	3.9 6.2	8.3 10.3	13.6 15.3	17.0 17.4	17.8 13.2	4.9 .5	.0 .0	.0 .0	.0 .0	.0 .0
BUMPING RIDGE	4600	1st 15th	.0 .0	.2 1.9	4.5 6.9	9.6 11.1	13.9 16.5	18.4 19.9	21.2 20.7	18.9 14.6	6.3 1.1	.0 .0	.0 .0	.0 .0
BUNCHGRASS MDW	5000	1st 15th	.0 .0	1.1 3.2	5.6 8.2	10.9 14.4	17.8 20.5	21.5 25.0	26.6 27.7	26.9 22.9	15.4 .0	.0 .0	.0 .0	.0 .0
CORRAL PASS	6000	1st 15th	.0 .1	.9 3.3	7.8 11.0	13.5 17.4	21.3 24.9	27.6 30.4	32.6 32.7	29.5 27.2	19.6 9.8	.0 .0	.0 .0	.0 .0
COUGAR MOUNTAIN	3200	1st 15th	.0 .0	.3 1.0	3.7 5.6	8.3 11.0	15.0 16.7	18.6 18.4	18.8 15.5	9.3 4.2	.0 .0	.0 .0	.0 .0	.0 .0
FISH LAKE	3371	1st 15th	.0 .0	.2 2.4	6.2 9.6	12.4 17.0	22.0 25.6	28.4 30.2	31.9 29.7	25.0 17.7	5.0 .4	.0 .0	.0 .0	.0 .0
GREEN LAKE	6000	1st 15th	.0 .1	.6 2.2	4.8 7.2	9.0 11.6	14.1 16.0	17.5 19.2	20.7 21.1	19.7 15.6	3.8 .3	.0 .0	.0 .0	.0 .0
GROUSE CAMP	5380	1st 15th	.0 .0	.3 2.0	4.6 7.1	8.9 11.2	13.8 15.5	17.1 18.6	19.8 15.4	9.2 4.2	.0 .0	.0 .0	.0 .0	.0 .0
HARTS PASS	6500	1st 15th	.0 .4	2.0 5.6	10.6 14.9	17.9 22.5	27.7 31.4	34.6 37.8	41.3 43.7	42.0 37.5	25.3 10.0	1.3 .0	.0 .0	.0 .0
JUNE LAKE	3340	1st 15th	.0 .1	.7 2.8	7.7 8.8	11.5 20.3	28.1 31.9	33.6 35.2	36.3 28.5	19.6 8.0	.0 .0	.0 .0	.0 .0	.0 .0
LONE PINE	3800	1st 15th	.0 .1	.4 2.2	6.9 8.2	12.0 16.2	20.8 25.2	28.1 30.0	32.1 32.3	26.4 26.1	9.4 1.5	.0 .0	.0 .0	.0 .0
LOST HORSE	5000	1st 15th	.0 .0	1.3 1.5	5.8 10.8	15.3 19.0	22.4 22.7	25.6 26.4	26.4 22.1	8.2 .0	.0 .0	.0 .0	.0 .0	.0 .0
LYMAN LAKE	5900	1st 15th	.0 .7	2.5 8.2	14.7 21.0	25.4 31.3	39.0 44.1	48.4 52.5	56.9 59.6	58.7 54.4	43.3 28.3	7.8 2.3	.0 .0	.0 .0
MINERS RIDGE	6200	1st 15th	.0 1.0	2.1 7.3	15.6 21.4	25.6 32.4	40.2 43.3	46.9 50.6	52.2 51.6	51.3 48.5	38.1 27.6	15.7 5.7	.0 .0	.0 .0

\* - Average not established. C-Conditional Average (based on less than 25 years of data)



# SNOTEL SWE Averages: 1961 - 1990 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	DATE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MORSE LAKE	5400	1st 15th	.0 .0	.6 4.2	10.5 15.2	19.1 24.5	29.6 34.6	38.5 43.9	47.2 46.9	44.4 38.4	21.4 5.0	.0 .0	.0 .0	.0 .0
MOUNT CRAG	4050	1st 15th	.0 .0	.3 .6	4.4 7.2	11.3 14.5	16.9 22.1	23.9 31.1	31.5 29.9	22.4 10.7	.0 .0	.0 .0	.0 .0	.0 .0
OLALLIE MEADOWS	3700	1st 15th	.0 .3	1.3 4.7	11.3 16.3	20.3 27.3	34.3 40.6	44.6 47.9	53.5 53.2	51.0 46.2	30.0 13.4	1.5 .0	.0 .0	.0 .0
PARADISE	5120	1st 15th	.0 .5	1.7 6.9	14.8 19.5	23.6 31.7	38.5 47.7	47.9 53.8	62.1 67.9	61.8 61.3	48.1 34.9	17.5 4.9	.0 .0	.0 .0
PARK CREEK RIDGE	4600	1st 15th	.0 .1	1.4 3.5	8.7 14.2	18.4 25.0	29.6 35.0	40.6 41.4	41.6 43.1	33.6 25.1	5.2 1.2	.0 .0	.0 .0	.0 .0
PIGTAIL PEAK	5900	1st 15th	.0 .3	1.4 5.4	11.4 16.1	20.1 24.9	30.4 35.6	41.0 44.9	49.3 51.0	47.7 47.2	37.5 24.8	7.9 .9	.0 .0	.0 .0
POPE RIDGE	3540	1st 15th	.0 .0	.4 2.0	4.7 7.3	9.1 11.1	13.9 15.4	16.7 17.1	15.7 10.9	1.6 .0	.0 .0	.0 .0	.0 .0	.0 .0
POTATO HILL	4500	1st 15th	.0 .2	.4 2.1	5.6 7.9	10.5 13.4	16.4 19.0	21.9 23.2	25.3 21.4	17.0 10.6	1.1 .0	.0 .0	.0 .0	.0 .0
QUARTZ PEAK	4700	1st 15th	.0 .0	.0 1.8	3.7 5.9	8.5 11.2	14.0 16.4	18.6 20.4	21.9 21.9	18.6 12.9	.0 .0	.0 .0	.0 .0	.0 .0
RAINY PASS	4780	1st 15th	.0 .3	1.4 4.2	8.4 12.6	15.4 19.9	24.5 29.0	32.7 35.6	38.0 39.1	36.8 31.8	20.4 8.0	.0 .0	.0 .0	.0 .0
SALMON MEADOWS	4500	1st 15th	.0 .0	.5 1.1	2.7 3.8	3.9 5.2	5.9 7.1	8.3 9.3	9.4 5.7	1.1 .5	.0 .0	.0 .0	.0 .0	.0 .0
SASSE RIDGE	4200	1st 15th	.0 .3	.8 2.9	7.2 9.9	12.4 16.6	21.6 24.5	27.4 29.6	32.1 29.6	24.1 14.4	1.3 .0	.0 .0	.0 .0	.0 .0
SHEEP CANYON	4030	1st 15th	.0 .1	.6 3.1	8.7 10.1	15.2 15.5	25.2 26.9	30.1 38.7	39.8 41.9	34.7 24.6	11.6 2.3	.0 .0	.0 .0	.0 .0
SPENCER MEADOW	3400	1st 15th	.0 .0	.0 .9	4.5 6.0	9.4 14.0	20.0 24.8	27.2 28.1	29.6 25.8	17.2 .0	.0 .0	.0 .0	.0 .0	.0 .0

\* - Average not established. C-Conditional Average (based on less than 25 years of data)

# SNOTEL SWE Averages: 1961 - 1990 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	DATE	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
SPIRIT LAKE	3120	1st 15th	.0 .0	.0 .9	1.3 2.7	1.8 4.6	6.4 7.3	6.6 4.9	3.6 .3	.3 .0	.0 .0	.0 .0	.0 .0	.0 .0
STAMPEDE PASS	3860	1st 15th	.0 .2	.7 3.6	9.5 13.6	16.7 23.2	28.8 34.6	38.2 40.3	44.4 43.6	39.1 31.2	15.0 3.6	.0 .0	.0 .0	.0 .0
STEVENS PASS	4070	1st 15th	.0 .1	.8 3.1	8.0 12.2	15.3 20.9	27.3 31.4	34.7 40.0	42.3 39.1	32.1 21.8	5.7 1.7	.0 .0	.0 .0	.0 .0
SURPRISE LAKES	4250	1st 15th	.0 .1	.8 3.8	10.6 14.0	20.2 24.3	30.4 34.5	37.5 39.8	44.2 42.6	36.1 31.6	14.5 .9	.0 .0	.0 .0	.0 .0
THUNDER BASIN	4200	1st 15th	.0 .3	.7 2.8	7.6 12.1	15.3 21.2	25.3 29.5	32.3 33.7	34.7 34.3	30.5 17.4	6.9 .0	.0 .0	.0 .0	.0 .0
TOUCHET #2	5530	1st 15th	.0 .0	.0 2.9	5.7 8.9	12.9 16.7	20.8 24.6	27.8 30.3	31.9 31.0	27.3 19.2	.0 .0	.0 .0	.0 .0	.0 .0
TROUGH	5300	1st 15th	.0 .1	.2 1.4	2.6 3.5	4.9 5.4	6.4 8.4	9.0 9.8	9.7 7.4	2.5 1.3	.0 .0	.0 .0	.0 .0	.0 .0
UPPER WHEELER	4400	1st 15th	.0 .0	.2 1.7	3.0 3.9	5.9 7.2	9.3 10.8	12.1 13.1	13.6 11.7	4.8 1.0	.0 .0	.0 .0	.0 .0	.0 .0
WHITE PASS E.S.	4500	1st 15th	.0 .1	.7 3.0	4.9 7.2	9.8 12.4	15.5 18.6	20.7 21.6	22.9 22.5	18.7 14.0	4.6 1.1	.9 .0	.0 .0	.0 .0

\* - Average not established. C-Conditional Average (based on less than 25 years of data)

# Snow Course SWE Averages: 1961-1990 (inches)

SNOW COURSE NAME	ELEV. (ft.)	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE	
		1st	15th	1st	15th	1st	15th	1st	15th	1st	15th	1st	15th
AHTANUM R.S.	3100	3.5		5.8		6.8		5.3					
ALPINE MEADOWS	3500					33.8		43.7					
BAIRD #2	3220												
BEAVER CREEK TRAIL	2200			9.7		12.6		11.6		4.1			
BEAVER PASS	3680			19.7		25.1		29.7		28.1			
BIG BOULDER CREEK	3200	7.8		12.8		18.0		17.8		7.7			
BLEWETT PASS #2	4270	6.4		11.6		14.3		15.1		7.5			
BOYER MOUNTAIN	5250					21.6		25.7		23.6		5.0	
BRIEF	1600			6.0		6.9		2.5					
BROWN TOP AM	6000			41.2		51.9		59.6		61.7			
BUMPING LAKE	3450	6.0	9.9	11.6	13.3	14.0	15.6	14.2	12.1	7.5	2.7	1.2	
BUMPING LAKE (NEW)	3400	7.5	12.2	14.2	16.9	17.6	19.8	18.3	16.5	10.9	9.3		
BUNCHGRASS MEADOWS	5000	14.8		21.8		26.6		29.5		26.8		5.0	
BUTTE CREEK	4070	4.2		6.4		8.2		9.0		5.7			
CARROL PASS	3650	11.0		17.5		23.8		31.3		26.9			
CAYUSE PASS	5300	32.4		52.9		65.3		82.4		88.1			
CHEWALAH	4930			10.2		13.5		16.1					
CHEWALAH #2	4930												
CHIWAUKUM G.S.	2500	4.8		8.7		10.7		8.9		1.0			
CITY CABIN	2390					12.3		13.6					
CLOUDY PASS AM	6500			27.1		32.9		42.1					
COLOCKUM PASS	5370			11.5		14.5		16.5					
CORRAL PASS	6000			21.7		33.9		40.1		37.5			
COX VALLEY	4500			24.9		32.4		39.5		39.1			
DEER PARK	5200			13.5		17.3		20.9		18.7			
DEVILS PARK	5900			30.3		36.9		42.9		45.0		31.8	
DOCK BUTTE AM	3800	25.7		41.1		56.1		65.4		66.8		52.5	
EASY PASS AM	5200	27.1		45.6		64.5		82.9		85.4		73.3	
FISH LAKE	3370	10.7		21.1		29.3		31.4		22.4			
FREEZEOUT CK. TRAIL	3500			8.8		11.1		11.5		7.0			
GOAT CREEK	3600	3.5		5.2		6.4		4.3					
GRANITE CREEK	3500			13.0		15.8		17.1		10.7			
GRASS MOUNTAIN #2	2900	4.8		10.3		13.9		15.9		2.3			
GREEN LAKE	6000			22.6		29.1		33.9					
GROUSE CAMP	5380			12.2		15.5		17.1					

\* - Average not established. C-Conditional Average (based on less than 25 years of data)



# Snow Course SWE Averages: 1961-1990 (inches)

SNOW COURSE NAME	ELEV. (ft.)	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE	
		1st	15th	1st	15th	1st	15th	1st	15th	1st	15th	1st	15th
HARTS PASS	6500			29.6		36.2		42.6		45.1			
HURRICANE	4500			13.7		17.4		22.1		21.9			
INDIAN ROCK	5340			18.2						89.3		81.1	
JASPER PASS AM	5400	37.9		58.8		75.0		86.0					
KELLER RIDGE	3700												
KROMONA MINE	2400			18.1		29.1		33.8		23.4		1.4	
DOMMERIE FLATS	2200	3.9		7.0		7.7		4.3					
LESTER CREEK	3100	8.0		14.8		17.7		23.3		15.0			
LITTLE MDWS AM	5280			30.2		37.2		44.0					
LYMAN LAKE	5900	23.5		40.5		49.8		58.7					
LYNN LAKE	4000	7.6		14.8		16.0		22.0		10.7			
MARTEN LAKE AM	3600	30.1		48.2		63.6		73.4		75.8		65.5	
MEADOWS CABIN	1900			5.4		6.2		4.8		1.1			
MERRITT	2140	7.1		12.4		14.4		12.8		3.6			
MIDDLE SULTAN	3010			9.4		16.9		20.2		13.0			
MISSION (OMAK)	1150					3.0							
MISSION RIDGE	5000			11.5		14.0		16.5					
MOUNT TOLMAN	2000			3.1		3.5							
MOSES MEADOWS (3)	3800			1.7		2.4				5.5			
MOSES MOUNTAIN (1)	4800	5.9		9.4		14.4		13.5		10.0		13.5	
MOSES PEAK (2)	6650	3.7		6.5		10.3		5.7					
MT. BLUM AM	5800	24.4		41.3		55.9		63.1		69.1		68.1	
MT. GARDNER	3300					14.2		14.1					
MUTTON CREEK #1	5700			9.2		11.4		13.2		9.6			
NEW HOZOMEEN LAKE	2800			8.0		10.9		10.4		4.5			
OLALLIE MEADOWS	3630	18.2		29.3		38.7		44.8		43.5		41.3	
OLNEY PASS	3250			12.0		21.5		25.6		16.6			
PARADISE PARK R S	5500	28.3		47.0		56.9		68.5					
PARK CREEK RIDGE	4600	17.5		33.2		42.5		43.1					
POPE RIDGE	3540			13.6		17.1		16.8		8.0			
RAGGED RIDGE	3330	3.8		6.2		7.4		3.5					
RAINY PASS	4780	25.3		27.7		33.4		39.3		40.6			
ROCKY CREEK AM	2100	11.7		20.0		25.2		27.8		19.1		1.8	
RUSTY CREEK	4000	3.8		5.0		6.2		5.9		.5			
SF THUNDER CK AM	2200	4.5		6.2		7.9		4.9		1.1			

\* - Average not established. C-Conditional Average (based on less than 25 years of data)

# Snow Course SWE Averages: 1961-1990 (inches)

SNOW COURSE NAME	ELEV. (ft.)	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE	
		1st	15th	1st	15th	1st	15th	1st	15th	1st	15th	1st	15th
SALMON MEADOWS	4500			6.8		8.9		9.4		4.6			
SATUS PASS	4030			7.7		8.2		7.7		2.8			
SAWMILL RIDGE	4700	13.3		23.9		29.7		36.3		28.2		16.6	
SCHREIBERS MDW AM	3400	21.9		35.1		47.9		58.8		56.2		41.4	
STEMILT SLIDE	5000			10.3		12.7		12.8		6.4			
STEVENS PASS SAND SD	3700	14.6		23.9		31.1		33.7		28.7		9.7	
STICKNEY RIDGE	3640			49.9		59.8		68.2		54.8		32.6	
STRANGER MOUNTAIN	4230			8.1		10.8		12.2					
SUMMIT G.S.	4600	3.6		5.6		7.1		8.1		5.6			
SUMMIT G.S. #2	4600			5.9		7.8		8.9					
THUNDER BASIN	4200			25.3		18.5		34.7		30.5		6.9	
TOGO	3370			7.8		9.3		10.8					
TUNNEL AVENUE	2450	8.1	13.7	15.4	19.3	19.2	23.7	20.8	19.8	12.7	11.8	2.7	
TWIN CAMP	4100	10.0		16.9		21.8		25.1					
TWIN LAKES	2700			6.7		8.7		5.2					
UPPER WHEELER	4400			8.0		9.4		7.8		1.4			
VAN EPPS PASS AM	5900												
WATSON LAKES AM	4500	24.2		38.7		53.3		64.9		67.2		57.4	
WHITE PASS E.S.	4500	8.8	13.0	16.0	19.4	20.7	23.7	23.5	25.0	23.3	26.1	12.0	
AIRSTRIIP (DISC)	1800	1.9		3.9		3.5		1.2					

\* - Average not established. C-Conditional Average (based on less than 25 years of data)

# Monthly Precipitation Averages: 1961 - 1990 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
BLEWETT PASS	4270	2.2	5.5	5.4	7.2	4.5	2.9	2.0	1.2	1.5	.4	.4	1.5	34.7
BUMPING RIDGE	4600	3.6	9.4	8.1	7.3	7.1	5.7	3.9	2.9	2.6	.9	.8	2.4	54.7
BUNCHGRASS MDW	5000	3.0	8.8	5.1	5.6	3.7	5.5	3.8	4.9	3.8	1.7	1.8	2.4	50.1
CORRAL PASS	6000	3.6	9.8	7.5	9.8	6.7	6.5	5.0	4.2	2.5	1.1	1.2	2.3	60.2
COUGAR MOUNTAIN	3200	7.8	17.3	11.4	13.5	10.1	10.2	7.3	6.3	4.2	2.7	2.3	4.9	98.0
FISH LAKE	3371	5.1	9.9	8.1	10.6	8.3	6.0	2.8	2.6	1.5	1.7	1.1	2.3	60.0
GREEN LAKE	6000	2.4	6.4	5.2	6.2	4.4	4.5	2.5	1.7	1.3	.8	.6	1.1	37.1
GROUSE CAMP	5380	1.7	5.7	4.6	5.2	4.1	3.9	1.9	1.3	1.6	.6	.8	1.1	32.5
HARTS PASS	6500	4.0	9.3	6.4	8.0	5.6	6.1	4.0	3.1	1.9	1.4	1.2	2.5	53.5
JUNE LAKE	3340	10.2	27.2	18.2	26.0	15.7	21.2	11.0	9.3	4.9	2.4	2.1	4.5	152.7
LONE PINE	3800	7.3	13.6	11.5	18.2	13.5	10.6	6.4	5.0	3.0	.8	1.3	2.6	93.8
LOST HORSE	5000	1.6	5.6	5.1	5.8	4.1	4.3	2.3	1.6	1.2	.7	.5	1.1	33.9
LYMAN LAKE	5900	6.8	12.4	10.4	13.3	8.5	8.0	6.2	3.5	2.5	2.0	1.6	3.2	78.4
MINERS RIDGE	6200	6.4	9.4	12.4	9.6	7.8	6.9	4.8	2.3	2.1	1.4	1.6	4.1	68.8
MORSE LAKE	5400	3.9	14.8	9.1	11.7	8.6	10.2	6.0	4.5	2.3	1.0	1.0	1.8	74.9
MOUNT CRAG	4050	4.6	11.3	11.5	8.7	8.4	8.6	4.2	3.0	2.0	1.6	1.8	3.6	69.3
OLALLIE MEADOWS	3700	9.5	18.7	14.8	19.0	13.8	12.7	10.1	6.5	4.2	2.8	2.0	4.7	118.8
PARADISE	5120	8.4	19.6	13.9	16.0	12.3	11.4	10.4	7.2	4.0	1.6	1.2	4.5	110.5
PARK CREEK RIDGE	4600	4.6	10.7	11.1	10.7	7.9	5.9	4.0	2.5	1.8	1.3	1.2	2.2	63.9
PIGTAIL PEAK	5900	5.0	12.9	9.2	11.2	8.2	8.8	6.7	4.8	2.9	1.4	1.1	2.3	74.5
POPE RIDGE	3540	2.0	6.3	5.0	5.7	4.0	4.1	2.2	1.9	2.1	.9	1.0	1.1	36.3
POTATO HILL	4500	4.0	10.7	8.2	9.5	6.7	7.1	4.7	4.5	2.5	1.5	.7	2.3	62.4
QUARTZ PEAK	4700	—	—	—	—	—	—	—	—	—	—	—	—	—
RAINY PASS	4780	4.4	8.6	7.2	7.9	7.5	5.7	4.0	3.0	2.1	1.7	1.1	2.8	56.0
SALMON MEADOWS	4500	1.8	3.3	2.2	1.8	1.8	2.4	2.0	2.4	2.7	1.3	1.2	.9	23.8
SASSE RIDGE	4200	4.4	9.9	6.9	9.6	6.4	5.9	4.1	2.1	1.1	.6	.6	1.8	53.4
SHEEP CANYON	4030	9.1	21.7	12.1	17.3	12.6	14.1	7.9	7.7	4.6	1.8	1.7	4.4	115.0
SPENCER MEADOW	3400	7.0	15.3	11.9	15.6	12.4	11.3	5.8	4.7	2.7	1.6	1.4	3.1	92.8
SPIRIT LAKE	3120	6.7	13.0	9.9	17.1	9.3	10.8	5.9	5.5	2.5	.7	1.4	2.3	85.1
STAMPEDE PASS	3860	6.7	14.2	10.9	13.3	10.4	9.2	6.7	5.4	3.0	2.0	1.8	3.7	87.3
STEVENS PASS	4070	7.0	15.0	10.4	12.1	9.1	7.1	5.7	4.5	2.8	2.0	1.3	3.6	80.6
SURPRISE LAKES	4250	5.9	17.1	11.2	13.1	10.4	10.5	8.1	5.5	3.9	1.9	1.4	3.2	92.2
THUNDER BASIN	4200	6.2	13.0	10.9	10.3	5.5	4.8	6.2	2.7	2.7	2.1	2.3	2.0	68.7
TOUCHET #2	5530	2.5	9.6	6.1	8.4	6.4	6.6	4.0	3.4	2.4	.9	1.1	1.9	53.3
TROUGH	5300	1.5	4.6	3.7	3.5	3.3	2.3	1.5	1.4	1.3	.8	.9	1.3	26.1

\* - Average not established. C-Conditional Average (based on less than 25 years of data)



# Monthly Precipitation Averages: 1961 - 1990 (inches)

SNOTEL SITE NAME	ELEV. (ft.)	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
UPPER WHEELER WHITE PASS E.S.	4400	1.5	5.2	3.6	3.5	2.7	2.5	2.1	1.4	2.2	.6	.4	1.6	27.3
	4500	4.8	6.7	5.5	7.3	6.1	3.0	2.5	1.6	1.9	.2	.6	1.5	41.7

\* - Average not established. C-Conditional Average (based on less than 25 years of data)

# Glossary:

**A, Accumulated**

Data value summed over several previous measurement periods.

**AM, Aerial Marker**

A vertical marker with equally-spaced crossbars at one- and two-foot increments. The depth of snow at these remote sites is determined by observation from low-flying aircraft. Snow water equivalent is calculated using measurements of snowpack density from nearby snow measurement sites.

**Average**

The mean value for a 30-year base period. The 30-year average is the accepted standard set by the World Meteorological Organization. The current base period is 1961-1990. A new 30-year average is calculated every 5 years. Standard averages are computed for sites having at least 25 years of data.

**Basin**

The major drainage area in which a measuring site is located.

**Conditional Average**

An average based on less than 25 years of data.

**D, Disc., Discontinued**

Site is no longer active and data collection has been discontinued.

**Data**

Refers to snow water equivalent or precipitation amounts.

**E, Est, Estimate**

Data value developed from a long-term correlation with a currently measured site. Estimates are provided when a site has been discontinued or a manual measurement was not made.

**Elevation**

The vertical reference of a site location above mean sea level, measured in feet.

**Max Date, Maximum Date**

The date when the snow water equivalent of the seasonal snowpack was at its highest prior to melting.

**Max SWE, Maximum Snow Water Equivalent**

The highest recorded value of snow water equivalent for the seasonal snowpack, in inches.

**Meltout Date**

The date when the seasonal snowpack was completely melted at a snow measuring site.

**Months**

Month names that head data columns in this report indicate:

1. Snow depth and snow water equivalent measurements that are usually taken near the end or middle of the month, and reported as first of month or fifteenth of month readings. This explains why, for example, a February 27 and a March 15 reading are shown under the March column.
2. Precipitation increment or catch measured during the month indicated.



## Glossary:

### **Precipitation**

The liquid equivalent (inches) of rainfall, snow, sleet, or hail, collected by precipitation storage gauges.

### **Seasonal Snowpack**

The snowpack that typically starts accumulating in the fall or early winter and remains until meltout occurs the following spring or summer. This does not include the intermittent snowpacks that occasionally occur in the early fall or early summer.

### **SNOTEL**

Abbreviation for SNOwpack TELemetry. A west-wide system for obtaining snow water equivalent, precipitation, air temperature, and other hydrologic measurements from remote data sites via radio transmission.

### **Snow Course**

A permanently marked data site where manual snow measurements are collected.

### **Site Number**

An indexing/locating number based on alpha and numeric grid divisions. Refer to the Data Site Maps included with this report.

### **Snow Depth**

An average of the vertical measurements of the depth of the snow measured at the snow course sample points and recorded to the nearest inch. Snow depth at aerial markers is estimated to the nearest half foot unless a ground measurement is made.

### **Start Date**

The date when the seasonal snowpack first began to accumulate at a snow measuring site.

### **SWE, Snow Water Equivalent**

The depth of water in the snowpack, if the snowpack were melted, expressed in inches.

### **WY, Water Year**

The water year in North America is referred to as the twelve month period beginning October 1 in one year and ending September 30 of the following year. The water year is designated by the calendar year in which it ends.

# The Following Agencies and Organizations Cooperate With the Natural Resources Conservation Service in Snow Survey Work:

<b>Canada</b>	Ministry of the Environment Investigations Branch, Victoria, British Columbia	<b>Local</b>	City of Tacoma City of Seattle Chelan County P.U.D. Pacific Power and Light Company Puget Sound Power and Light Company Washington Water Power Company Snohomish County P.U.D. Colville Confederated Tribes Spokane County Yakima Indian Nation
<b>Federal</b>	Department of the Army Corps of Engineers U.S. Department of Agriculture Forest Service U.S. Department of Commerce NOAA, National Weather Service U.S. Department of Interior Bonneville Power Administration Bureau of Reclamation Geological Survey National Park Service Bureau of Indian Affairs	<b>Private</b>	Okanogan Irrigation District Wenatchee Heights Irrigation District Newman Lake Homeowners Association
<b>State</b>	Washington State Department of Ecology Washington State Department of Natural Resources		

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.





U.S. DEPT. OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE  
ROCK POINTE TOWER II, SUITE 450  
W. 316 BOONE AVE.  
SPOKANE, WASHINGTON 99201-2348

OFFICIAL BUSINESS  
PENALTY FOR PRIVATE USE \$300

BULK RATE  
U.S. POSTAGE  
**PAID**  
Spokane, WA  
Permit No. 4

**THIRD CLASS MAIL**

**WASHINGTON  
ANNUAL DATA SUMMARY  
OF**  
Federal-State-Private  
Cooperative Snow Surveys



3  
U. S. DEPT. OF AGRICULTURE  
NATIONAL AGRICUL. LIBRARY  
CURRENT SERIAL RECORDS  
BELTSVILLE, MD 20705